

Remarks

A. Amendment to the Specification:

Applicant has amended the specification to claim priority to the parent application. No new matter has been added to the specification.

B. Amendment to the Claims:

Applicants have cancelled certain claims in an effort to clarify the subject matter that they claim as their invention and to advance prosecution of this application. Applicants have cancelled those claims that duplicated the allowed claims of the parent application. Applicants are pursuing the rejected claims of the parent application as Applicants believe that the references cited in the Final Office Action of the parent application do not render those claims anticipated or obvious. Specifically, the Turchan et al. reference (5,554,415), cited by the Examiner, does not disclose a sintered polycrystalline diamond compact. Rather, Turchan discloses plasma deposition of diamond on a substrate. Such diamond is very thin and fragile. It is not thick, hard and durable like sintered polycrystalline diamond. Further, Turchan's plasma system does not create the residual stress fields or the prosthesis which enhance strength of the diamond table and increase its bond strength to the substrate. Turchan does not disclose a gradient transition zone as defined and claimed in the present invention. The gradient transition zone of the present invention is formed by liquefying both the substrate and the diamond during sintering, resulting in a sweep or flow of solvent-catalyst metal from the substrate into the diamond table and residual solvent-catalyst metal in the diamond table after sintering. Turchan merely deposits the diamond on a substrate without liquefying the substrate first and achieving the sweep of solvent-catalyst metal from the substrate into the diamond table.

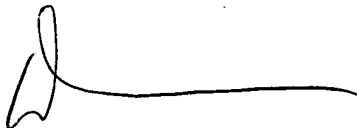
Conclusion

In view of the foregoing, Applicants believe that the pending claims are in condition for allowance.

Please debit Deposit Account No. 50-0581 for any additional fees.

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Respectfully submitted,



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